

Patent claims

1. A method for testing the radio transceiver in a system where the transmission signal pass band, limited by the transmission branch filter of a duplex filter, and the reception signal pass band, limited by the reception branch filter, are adjacent so that the frequency response curves of said
 5 filters partially overlap at the stop band between the pass bands, characterized by the steps of:

arranging a test loop between the transmission branch and the reception branch, wherein the test loop includes a TX coupling, a band pass
 10 filter, and a RX coupling, the test loop having essentially less attenuation on the test frequency than the duplex filter and thus a test signal proceeds via the test loop from the transmitter to the receiver,

tuning the transmitter's transmission frequency away from the transmission signal pass band to a test frequency that falls into the stop
 15 band of the transmission branch filter frequency response curve and the reception branch filter frequency response curve,

tuning the receiver reception frequency to the test frequency,
 transmitting the test signal,
 receiving the test signal which has been attenuated while passing
 20 through the test loop.

2. A method for testing the radio transceiver in a system where the transmission signal pass band, limited by the transmission branch filter of a duplex filter, and the reception signal pass band, limited by the reception branch filter, are adjacent such that the frequency response curves of said
 25 filters partially overlap at the stop band between the pass bands, characterized by the steps of:

arranging a test loop between the transmission branch and the reception branch, wherein the test loop includes a TX coupling, a switch, and a RX coupling, the test loop having essentially less attenuation on the test
 30 frequency than the duplex filter and thus a test signal proceeds via the test loop from the transmitter to the receiver when the switch having been closed by a switch control,

tuning the transmitter's transmission frequency away from the transmission signal pass band to a test frequency that falls into the stop
 35 band of the transmission branch filter frequency response curve and the reception branch filter frequency response curve,

the transmission signals are combined by a combiner into a sum signal and transmitted to the duplex filter, and the received sum signal
35 containing various frequencies is routed from the duplex filter to a divider that

splits the signal containing different frequencies to be delivered to its receiver,

the pass band for the system transmission signal frequencies limited by the duplex filter transmission branch filter and the pass band for the system reception signal frequencies limited by the duplex filter reception branch filter are adjacent so that the filter frequency response partially overlap curves at the stop band between the pass bands, characterized by the steps of:

arranging a test loop between the transmission branch and the reception branch, wherein the test loop includes a TX coupling, a switch, and a RX coupling, the test loop having essentially less attenuation on the test frequency than the duplex filter and thus a test signal proceeds via the test loop from the transmitter to the receiver when the switch having been closed by a switch control,

tuning the transmitter's transmission frequency away from the transmission signal pass band to a test frequency that falls into the stop band of the transmission branch filter frequency response curve and the reception branch filter frequency response curve,

tuning the receiver reception frequency to the test frequency, transmitting the test signal, receiving the test signal which has been attenuated while passing through the test loop.

5. A method in accordance with patent claim 3 or 4, characterized in that the reception frequency of each receiver is tuned to the test frequency,

transmitting the test signal by one transmitter, receiving the test signal by each receiver, and if at least one receiver receives the test signal correctly, it is assumed that a receiver receiving the test signal incorrectly is defective.

6. A method in accordance with patent claim 3 or 4, characterized in that

sending the test signal by the transmitters one by one, receiving the test signal by several receivers, inferring that the transmitter being tested is defective if at least one receiver has received the test signal sent by any other transmitter correctly

7. A method in accordance with patent claim 3 or 4, characterized in that

10 8. A system for testing the radio transceiver in a system that
comprises

a test control tuning the transmitter and the receiver on the same test frequency as response to control and the transmitter sending the test signal.

a test filter that is connected between the transmission branch and reception branch and causing an attenuation on the test frequency that is essentially lower than the attenuation caused by the duplex filter, which enables the test signal to proceed along the test loop from the transmitter to the receiver via a TX coupling, a switch, and a RX coupling, the test filter causing an attenuation on the transmission signal pass band and the reception signal pass band limited by the duplex filter being essentially higher than the attenuation caused by the duplex filter, which enables the transmission signal to proceed from the transmitter to the duplex filter and on to the antenna.

a transmission branch consisting of a functionally inter-connected transmitter and duplex filter and a reception branch consisting of a functionally inter-connected receiver and duplex filter, with the duplex filter

limiting the transmission signal pass band and the reception signal pass band,

a test control tuning the transmitter and the receiver on the same test frequency as response to control and the transmitter sending the test

5 signal,

characterized in that it comprises:

a test filter that is connected between the transmission branch and reception branch and causing an attenuation on the test frequency that is essentially lower than the attenuation caused by the duplex filter, which enables the test signal to proceed along the test loop from the transmitter to the receiver via a TX coupling, a band pass filter, and a RX coupling when the switch having been closed by a switch control, the test filter causing an attenuation on the transmission signal pass band and the reception signal pass band limited by the duplex filter being essentially higher than the attenuation caused by the duplex filter, which enables the transmission signal to proceed from the transmitter to the duplex filter and on to the antenna.

10 10. A system in accordance with patent claim 8 or 9, characterized in that the test frequency is outside the range of the transmission signal pass band of the duplex filter.

20 11. A system in accordance with patent claim 8 or 9, characterized in that the test filter is integrated within the duplex filter, in which case the test loop also includes the cabling between the transmitter and the duplex filter and the cabling between the duplex filter and the receivers.

25

100045-4404